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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,262	10/27/2003	Chinnugounder Senthilkumar	10559-650003	4701
20985	7590	04/08/2004	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			SHINGLETON, MICHAEL B	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/695,262

Applicant(s)

SENTHILKUMAR ET AL.

Examiner

Michael B. Shingleton

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10-27-2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 21-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Applicant's copies of the 892's from parent application

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 21 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Martin et al. 4,977,380 (Martin).

Figures 4, 5a and 5b in combination with the entire disclosure of Martin disclose an apparatus for providing a variable level of capacitance having a plurality of capacitors (C13, C14...), each selectable through an independent control signal (In Figures 4 and 5b of Martin. note the signal lines individually connected to the gates of the switching elements like Q14 that control which capacitor is connected in or out of the circuit.). These independent control signals are generated by a logic circuit (Note Figure 5a that clearly shows logic elements like U6A, U6B that forms a logic circuit.). The selected capacitors of Martin clearly provide an amount of capacitance that is the sum of the individual capacitances of the selected capacitors. Martin also clearly discloses buffer circuitry (Note Figure 5b that shows the use of buffer circuitry like U9E. Also note column 4, around line 21 that describes these elements as "buffers"). These buffers inherently isolate. Thus in the circuit of Martin these buffers decouple the plurality of capacitors from the logic circuit that clearly prevents noise in the logic circuit from affecting the plurality of capacitors.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. 4,977,380 (Martin) in view of Yamazaki et al. 6,181,184 (Yamazaki).

Martin as applied in the above rejection based on 35 USC 102 and the following: Martin is silent on the showing of the power supply for the buffers and the use of a filter circuit connected to the power supply to generate a filtered power supply signal that is used to power these buffers.

Buffers need a power supply in order to function. Even though the power supply is not shown in Martin one of ordinary skill would have realized that a power supply is required to make the invention work. Figure 39 of Yamazaki shows a power supply Vcc and a filter connected between this power supply and the buffer 122. This not only provides the necessary power to operate a buffer, but the filter clearly filters out the noise or the ac component from and to the power supply.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided both a power supply and a filter in the power supply path for the buffers of Martin so as to provide the necessary power for the buffer as is conventionally known and filter out unwanted signals as taught by Yamazaki.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. 4,977,380 (Martin) in view of Early et al. 5,391,999 (Early).

Martin as applied in the above rejection based on 35 USC 102 and the following: As noted above Martin utilizes MOSFETs for the switching elements that switch in and out the capacitors that make up the variable capacitor of Martin. Martin is silent on the use of "transmission gates" for the switching elements.

Early discloses that the shown N-channel transistors (MOSFETs) and the shown Transmission gates are switching elements and that many different elements may be substituted therefore (See the paragraph that begins around line 37). Thus Early clearly recognizes the art recognized equivalence of these elements as well as the equivalence of these elements with many other forms of switching devices.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted transmission gates for the MOSFETs of Martin. One of ordinary skill in the art would have been motivated to make the substitution for these are art recognized equivalent forms of switches that can be used in place of one another as recognized and taught by Early.

***Conclusion***

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishimura and Liu disclose the general state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is 571-272-1770. The examiner can normally be reached on Monday-Thursday from 8:00 to 4:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

MBS

March 25, 2004

*Michael B. Shingleton*  
**MICHAEL B. SHINGLETON**  
**PRIMARY EXAMINER**  
**GROUP ART UNIT 2817**